Z77 OC FORMULA

Intel® Z77 Chipset

ASRock

Product Brief

- Supports NickShih's OC Profile, Formula Drive, FAN-Tastic Tuning, Multi Thermal Sensor
- Supports Fine-Tuning V-Controller, Interactive UEFI, Timing Configurator
- Supports Rapid OC, PCIe ON/OFF, V-Probe
- Supports ASRock XFast 555, Lucid MVP, Dehumidifier, OMG
- Free Bundle : 1 x Front USB 3.0 Panel, 10 x OC Stands

Detail Specification

Platform
- CEB Form Factor: 12.0-in x 10.5-in, 30.5 cm x 26.7 cm
- Premium Gold Capacitor design (100% Japan-made high-quality Conductive Polymer Capacitors)

OC Formula Kit

OC Formula Power Kit
- Digi Power
- Dual-Stack MOSFET (DSM)
- Multiple Filter Cap (MFC) (Filter different noise by 3 different capacitors: DIP solid cap, POSCAP and MLCC)
- Premium Alloy Choke (Reduce 70% core loss compare to iron powder choke)
- 12 + 4 Power Phase Design

OC Formula Connector Kit
- Hi-Density Power Connector
- 15µ Gold Finger (CPU and memory sockets)

OC Formula Cooling Kit
- Twin-Power Cooling (Combine active air cooling and water cooling)
- 8 Layer PCB
- 4 x 2oz copper
- GELID GC-Extreme Thermal Compound

CPU
- Supports 3rd and 2nd Generation Intel® Core™ i7 / i5 / i3 in LGA1155 Package
- Supports Intel® Turbo Boost 2.0 Technology
- Supports Intel® K-Series unlocked CPU
- Supports Hyper-Threading Technology

Chipset
- Intel® Z77
- Supports Intel® Rapid Start Technology and Smart Connect Technology

Memory
- Dual Channel DDR3 memory technology
- 4 x DDR3 DIMM slots
- Supports DDR3 3000+(OC)/2800(OC)/2666(OC)/2400(OC)/2133(OC)/1866(OC)/1600/1333/1066 non-ECC, un-buffered memory
- Max. capacity of system memory: 32GB
- Supports Intel® Extreme Memory Profile (XMP) 1.3 / 1.2

Expansion Slot
- 2 x PCI Express 3.0 x16 slots (PCIE2/PCIE4: single at x16 (PCIE2) / x8 (PCIE4) or dual at x8/x8 mode)
  * PCIE 3.0 is only supported with Intel® Ivy Bridge CPU. With Intel® Sandy Bridge CPU, it only supports PCIE 2.0.
- 1 x PCI Express 2.0 x16 slot (PCIE5: x4 mode)
- 2 x PCI Express 2.0 x1 slots
- Supports AMD Quad CrossFireX™, 3-Way CrossFireX™ and CrossFireX™
- Supports NVIDIA® Quad SLI™ and SLI™

Graphics
* Intel® HD Graphics Built-in Visuals and the VGA outputs can be supported only with processors which are GPU integrated.
- Supports Intel® HD Graphics Built-in Visuals : Intel® Quick Sync Video 2.0, Intel® InTru™ 3D, Intel® Clear Video HD Technology, Intel® Insider™, Intel® HD Graphics 2500/4000
- Pixel Shader 5.0, DirectX 11 with Intel® Ivy Bridge CPU. Pixel Shader 4.1, DirectX 10.1 with Intel® Sandy Bridge CPU.
- Max. shared memory 1760MB
- Supports HDMI 1.4a Technology with max. resolution up to 1920x1200 @ 60Hz
- Supports Auto Lip Sync, Deep Color (12bpc), xvYCC and HBR (High Bit Rate Audio) with HDMI (Compliant HDMI monitor is required)
- Supports HDCP function with HDMI port
- Supports Full HD 1080p Blu-ray (BD) / HD-DVD playback with HDMI port

Audio
- 7.1 CH HD Audio with Content Protection (Realtek ALC898 Audio Codec)
- Premium Blu-ray audio support
- Supports THX TruStudio™

LAN
- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- Broadcom BCM57781
- Supports Wake-On-LAN
- Supports Energy Efficient Ethernet 802.3az
- Supports PXE

Rear Panel I/O

I/O Panel
- 1 x PS/2 Mouse/Keyboard Port
- 1 x HDMI Port
- 1 x Optical SPDIF Out Port
- 4 x Ready-to-Use USB 2.0 Ports
- 6 x Ready-to-Use USB 3.0 Ports
- 1 x RJ-45 LAN Ports with LED (ACT/LINK LED and SPEED LED)
- 1 x Clear CMOS Switch with LED
- HD Audio Jack: Rear Speaker / Central / Bass / Line in / Front Speaker / Microphone

SATA3
- 2 x SATA3 6.0 Gb/s connectors by Intel® Z77, support RAID (RAID 0, RAID 1, RAID 5, RAID 10, Intel Rapid Storage and Intel Smart Response Technology), NCQ, AHCI and "Hot Plug" functions
- 4 x SATA3 6.0 Gb/s connectors by Marvell SE9172, support RAID (RAID 0 and RAID 1), NCQ, AHCI and "Hot Plug" functions

USB 3.0
- 2 x Rear USB 3.0 ports by Intel® Z77, support USB 1.0/2.0/3.0 up to 5Gb/s
- 4 x Rear USB 3.0 ports by Etron EJ188H, support USB 1.0/2.0/3.0 up to 5Gb/s
- 1 x Front USB 3.0 header by Intel® Z77 (supports 2 USB 3.0 ports), supports USB 1.0/2.0/3.0 up to 5Gb/s

Connector
- 4 x SATA2 3.0 Gb/s connectors, support RAID (RAID 0, RAID 1, RAID 5, RAID 10, Intel Rapid Storage and Intel Smart Response Technology), NCQ, AHCI and Hot Plug functions
- 6 x SATA3 6.0 Gb/s connectors
- 1 x IR header
- 1 x CIR header
- 1 x COM port header
- 1 x HDMI_SPDIF header
- 1 x Power LED header
- V-Probe™: 2 x 7-set of onboard voltage measurement points laid
- 2 x CPU Fan connectors (1 x 4-pin, 1 x 3-pin)
- 4 x Chassis Fan connectors (1 x 4-pin, 3 x 3-pin)
- 1 x Power Fan connector (3-pin)
- 1 x MOS Fan connector (3-pin)
- 24 pin ATX power connector
- 8 pin 12V power connector
- 4 pin 12V power connector
- SLI/XFire power connector
- Front panel audio connector
- 3 x USB 2.0 headers (support 6 USB 2.0 ports)
- 1 x USB 3.0 header (supports 2 USB 3.0 ports)
- 1 x Dr. Debug with LED
- 1 x Power Switch with LED
- 1 x Reset Switch with LED
- 1 x Clear CMOS Switch with LED
- Rapid OC Button: +/- buttons to adjust OC frequency
- 1 x PCIe ON/OFF Switch
- 1 x Post Status Checker (PSC)

BIOS Feature
- 2 x 64Mb AMI UEFI Legal BIOS with GUI support (1 x Main BIOS and 1 x Recovery Backup BIOS)
- Supports "Plug and Play"
- ACPI 1.1 Compliance Wake Up Events
- SMBIOS 2.3.1 Support
- CPU Core, IGPU, DRAM, 1.8V PLL, VTT, VCCSA Voltage Multi-adjustment

Support CD
- Drivers, Utilities, AntiVirus Software (Trial Version), CyberLink MediaEspresso 6.5 Trial, ASRock MAGIX Multimedia Suite - OEM

Unique Feature
- Formula Drive
- ASRock Instant Boot
- ASRock Instant Flash
- ASRock APP Charger
- ASRock SmartView
- ASRock XFast USB
- ASRock XFast LAN
- ASRock XFast RAM
- ASRock Crashless BIOS
- ASRock OMG (Online Management Guard)
- ASRock Internet Flash
- ASRock UEFI System Browser
- ASRock Dehumidifier Function
- ASRock Interactive UEFI
- NickShih's OC Profile
- Fine-Tuning V-Controller
- Timing Configurator
- Lucid Virtu Universal MVP
  * Lucid Virtu Universal MVP can be supported only with processors which are GPU integrated.
- Hybrid Booster:
  - ASRock U-COP
  - Boot Failure Guard (B.F.G.)
- Combo Cooler Option (C.C.O.)
- Good Night LED

Hardware Monitor
- CPU/Chassis/Power/MOS Temperature Sensing
- CPU/Chassis/Power/MOS Fan Tachometer
- CPU/Chassis/MOS Quiet Fan (Allows Chassis Fan Speed Auto-Adjust by CPU Temperature)
- CPU/Chassis/MOS Fan Multi-Speed Control
- FAN-Tastic Tuning
- Multi Thermal Sensor
- Voltage Monitoring: +12V, +5V, +3.3V, CPU Vcore

OS

Microsoft® Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit compliant

Certifications
- FCC, CE, WHQL
- ErP/EuP Ready (ErP/EuP ready power supply is required)

Accessories
- 1 x ASRock SLI_Bridge_2S Card
- Quick Installation Guide, Support CD, I/O Shield
- 6 x SATA Data Cables
- 2 x SATA 1 to 1 Power Cables
- 1 x Front USB 3.0 Panel
- 4 x HDD Screws
- 6 x Chassis Screws
- 1 x Rear USB 3.0 Bracket
- 10 x OC Stands
- GELID GC-Extreme Thermal Compound

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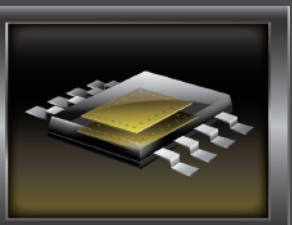
POWER KIT

12 + 4 Power Phase Design

ASRock Z77 OC Formula is designed with a 12 + 4 Power Phase design. It features sturdy components and completely smooth power delivery to the CPU. Plus, it offers unmatched overclocking capability and enhanced performance with the lowest temperature for advanced gamers as well.

Premium Alloy Choke (PAC)

Compared to iron powder choke, the new PAC highlights a special alloy formula which is able to reduce up to 70% core loss. The revolutionary choke construction features a highly-magnetic and heat-resistant design, increasing the board's lifespan as well.



Dual-Stack MOSFET (DSM)

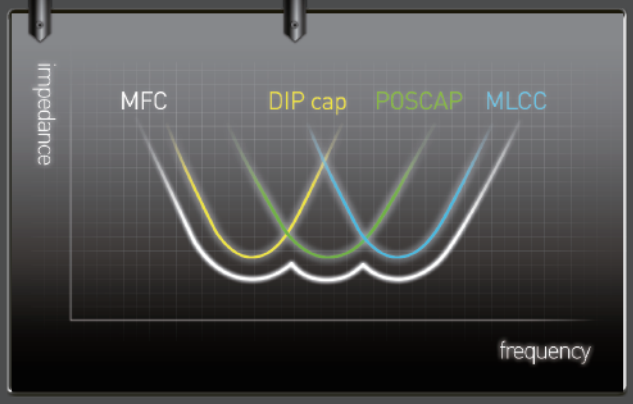
DSM is an innovative new design of MOSFETs. The silicon die area is increased by stacking two dies into a MOSFET. The larger the die area, the lower Rds(on). Compared to traditional discrete MOSFET, DSM can provide larger die area and lower Rds(on), so the power supply for CPU Vcore is more efficient.

Digi Power

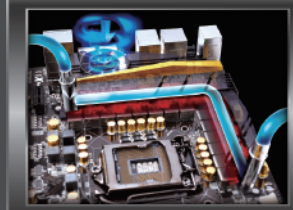
Z77 OC Formula is equipped with CHIL 8328 silicon which features a new digital PWM (Pulse-Width Modulation) design, providing CPU Vcore voltage more efficiently and smoothly.

Multiple Filter Cap (MFC)

The ASRock MFC includes a combination of highly conductive MLCC, DIP cap and POSCAP. It helps the system filter noise from high-freq, mid-freq to low-freq noise, delivering enhanced and higher current to the CPU. With the combined power of three capacitors, MFC allows users to overclock their PC rig to extreme levels without worrying about the hardware components.



COOLING KIT



Twin-Power Cooling

Twin-Power Cooling combines active air cooling with water cooling. The ultimate heatpipe cooling design maximizes the system's convection to expel hot air out, providing great air flow and faster heat dissipation.

8 Layer PCB

ASRock Z77 OC Formula is built on an 8-layer-PCB design. It comes with 4 sets of 2 ounces copper inner layers, using only carefully selected copper materials for PCB layers, delivering lower temperature and higher energy efficiency for overclocking.

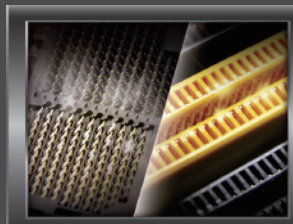
GELID GC-Extreme Thermal Compound

GELID GC-Extreme Thermal Compound is an added bonus that allows overclockers to stabilize the CPU's temperature.

CONNECTOR KIT

Hi-Density Power Connector

Hi-Density Power Connector features a solid square-pin design. ASRock Z77 OC Formula is equipped with High-Density Power Connector for the CPU power connector. The optimized design can reduce 23% power loss and decrease connector temperature up to 22°C.



15μ Gold Finger

ASRock has embedded 15μ Gold Finger for both CPU sockets and DRAM slots. Compared to other boards that come with only 3-4μ, ASRock Z77 OC Formula provides 15μ gold components within the sockets, delivering triple performance than usual.

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NickShih's OC Profile

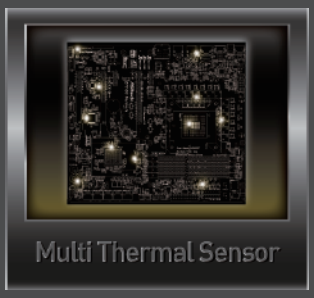
NickShih's OC Profile offers you a chance to learn a few tricks from the champion. It doesn't matter whether you're using a K-Series or No-K Series CPU, NickShih's OC Profile will automatically detect your CPU and offer you different levels of overclocking.

Interactive UEFI

ASRock Interactive UEFI is a blend of system configuration tools, cool sound effects and stunning visuals. The unprecedented UEFI provides a more attractive interface and brings a lot more amusing.

Formula Drive

ASRock Formula Drive is an all-in-one software to fine-tune different features in an user-friendly interface, which includes Hardware Monitor, FAN-tastic Tuning, Overclocking, OC DNA, IES, XFast RAM and Multi Thermal Sensor.



Multi Thermal Sensor

Multi Thermal Sensor provides users the temperature of various parts of the motherboard graphically in ASRock UEFI Setup Utility and Formula Drive, so that users may precisely keep track and control of the temperature of each parts of their motherboard when overclocking.

FAN-Tastic Tuning

FAN-Tastic Tuning offers the flexibility to adjust the fan speed (RPM) relative to the system temperature. Users are able to adjust the setting by clicking the "+/-" and confirm by "APPLY" afterwards.

Rapid OC

The onboard Rapid OC button allows overclockers to manually raise and lower the CPU ratio, BCLK frequency and CPU Vcore voltage. OC enthusiasts can use it to find their CPU's best margin.

PCIe ON/OFF

For those who constantly need to remove then reinstall their PCIe cards back into the PCIe slots and fear of damaging the motherboard and its components, ASRock has added three PCIe ON/OFF switches to enable or disable the PCIe slots in a flick of your finger.

Fine-Tuning V-Controller

Fine-Tuning V-Controller is a new collection of voltage fine tuning options in ASRock UEFI Setup Utility. It provides more than enough voltage configuration options for overclockers who wish to pursuit extremes.

V-Probe

V-Probe™ is a set of detection points laid on the Z77 OC Formula. It allows overclockers to easily and quickly get the accurate voltage readings via the multitester.

Timing Configurator

Timing Configurator is a fast and easy tool that provides users with an abundant collection of subtle DRAM settings for professional tweaking. It is an independent application that runs under Windows® OS and your changes will take effect immediately.

XFast 555

ASRock unique XFast 555 Technology (XFast RAM, XFast LAN, and XFast USB) allows users to experience 5 times performance boost in terms of system performance, LAN speed and USB transfer speed.

Lucid Virtu MVP

Brilliantly designed for gaming, Virtu Universal MVP™ switchable graphics software assigns tasks dynamically to the best graphics resource and features two exciting techniques – HyperFormance™ and Virtual Vsync™.

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